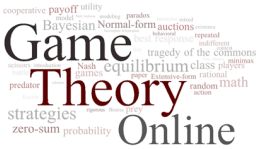
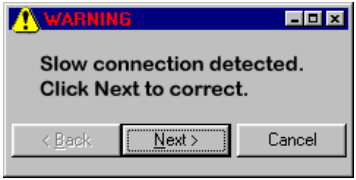
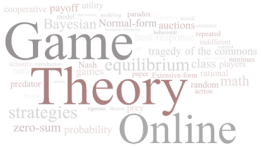


Game Theory Intro

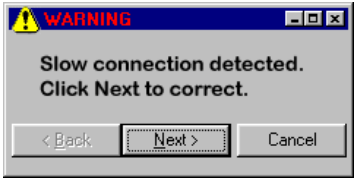
Game Theory Course:
Jackson, Leyton-Brown & Shoham

TCP Backoff Game





TCP Backoff Game



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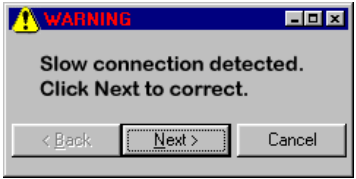
TCP Backoff Game



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- This problem is an example of what we call a two-player game:
  - both use a correct implementation: both get 1 ms delay
  - one correct, one defective: 4 ms for correct, 0 ms for defective
  - both defective: both get a 3 ms delay.

TCP Backoff Game

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- Play this game: in your head; with a friend; on our online system.
- Some questions to discuss after playing:
  - What action should a player of the game take?
  - Would all users behave the same in this scenario?
  - What global behavior patterns should a system designer expect?
  - For what changes to the numbers would behavior be the same?
  - What effect would communication have?
  - Repetitions? (finite? infinite?)
  - Does it matter if I believe that my opponent is rational?